

Methods: The study included 31 patients (57 ± 14 years, 23 males) with HCM and preserved LVEF ($65 \pm 8\%$, range 50 to 79%) without significant LV obstruction (< 50 mmHg) at rest. All underwent exercise testing and 2D and 3D echocardiography. LV dyssynchrony defined by the 16 segment standard deviation of time to peak longitudinal strain by speckle tracking (16SD) was compared to exercise capacity, 3D myocardial mass and LV filling pressure assessed by the ratio E/E'_{TDI} (Peak early filling velocity over peak systolic velocity by TDI).

Results: LV dyssynchrony ($16SD = 96 \pm 35$ ms) was associated to a reduced exercise capacity ($r = -0.39$, $p = 0.035$) and increased LV filling pressure ($r = 0.50$, $p = 0.01$). Interestingly LV dyssynchrony increased with the severity of myocardial hypertrophy ($r = 0.66$, $p < 0.001$) and was associated to a reduce global strain ($r = -0.62$, $p < 0.001$).

Conclusion: Myocardial dyssynchrony increased with the severity of myocardial hypertrophy in HCM patients and may be involved in exercise limitation in patients without LV obstruction and preserved LVEF.

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VO2 max to measure the functional status of obese heart failure patients.

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Background: Obesity has been described as an independent risk factor for heart failure (HF). However, B-type natriuretic peptide (BNP) failed in evaluation of the severity of HF in obese patient because: i) Obese patients suffer dyspnoea earlier than non obese which leads to an earlier diagnosis and could explain lower BNP rates, and ii) BNP receptors were found on adipocytes suggesting a higher clearance of BNP in obese patients.

Purpose: Our aim was to explore the relationship between functional status of obese HF patients and BNP levels.

Method and results: In our HF registry, 249 patients with dilated cardiomyopathy (DCM) were included in 3 groups regarding their body mass index: 112 normal weighted < 25 kg/m² (NW), 88 overweighted 25-29.9 kg/m² (OW), and 49 obese ≥ 30 kg/m² or greater (Ob) patients. We analyzed NYHA status, the 6 minutes walk test (6MWT) a simple and reliable way to assess the exercise capacity of DCM patients, and measured the peak oxygen consumption during incremental exercise (VO2 max).

There was no significant difference between the 3 groups for baseline characteristics and ejection fraction was comparable (NW: $27 \pm 9\%$; OW: $27 \pm 9\%$; Ob: $29 \pm 10\%$; $p = 0.26$)

BNP levels were lower in the obese group (962 ± 1166 in NW, 757 ± 204 in OW, 353 ± 608 in Ob; $p = 0.02$). There was no significant difference between groups in distance covered in the 6MWT (NW: 370 ± 98 m; OW: 392 ± 125 m; Ob: 388 m; $p = 0.27$) and NYHA scores (NW: 2.3 ± 0.7 ; OW: 2.3 ± 0.6 ; Ob: 2.4 ± 0.7 ; $p = 0.32$), however, VO2 max was significantly lower in the Ob patients (NW: 17.4 ± 7.7 ml/min/kg; OW: 16.1 ± 5.0 ml/min/kg; Ob: 14.8 ± 6.9 ml/min/kg; $p = 0.04$).

Conclusion: These results show that VO2 max is more useful to discriminate functional status in obese patients with DCM compared to 6MWT, NYHA scores and BNP levels. BNP in the obese likely underestimates severity of HF.

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Ability of ST/HR index and ST/HR hysteresis during exercise testing to predict significant ischemia assessed by G-SPECT imaging

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Purpose: Heart rate adjustment of exercise-induced ST-segment depression (ST/HR index and ST/HR hysteresis) has been suggested as an accurate predictor of the presence of a coronary artery disease. Its powerful predictive value for proven coronary artery stenosis is now accepted. The objective of our study was to investigate the sensitivity and specificity of computerized ST/HR index and ST/HR hysteresis to detect significant ischemia.

Methods: We used a cross-sectional analysis of exercise test and myocardial perfusion stress-rest SPECT data. The study population comprised 710 consecutive patients referred for myocardial perfusion imaging. The threshold of significant ischemia was set above 10% reversibility hypoperfusion area from entire surface of left ventricle using gated -SPECT image analysis (QGS). Diagnostic performance of ST/HR index and ST/HR hysteresis was assessed by receiver operating characteristic (ROC) curve.

Results: Crude ST/HR hysteresis showed at the same 70% specificity, a sensitivities of 56% and 57%, respectively. Diagnostic performance of ST/HR hysteresis seems slightly better than ST/HR index (AUC = .668 vs .654) with the following cut points .038 mV and 1.625 μ V/ bpm. Adjusting these variables to body mass index does not improve the diagnostic performance. Combining an independent clinical judgement in the model yields a moderate increase of the diagnostic accuracy the prediction only for ST/HR index as suggested by the AUC (.688).

Conclusions: ST/HR index and ST/HR hysteresis have a good capability to detect a significant myocardial ischemia evaluated by SPECT, which has therapeutic implications.

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Epidemiological profile, management and outcome of 1200 patients with chronic heart failure

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Introduction: Heart failure (HF) remains a frequent reason for admission and readmission to hospital and therefore represents a major public health burden. The aim of our study is to report the experience of our therapeutic unit of heart failure (TUHF), the epidemiological profile, the management and the outcome of 1200 patients with chronic heart failure (CHF).

Material and methods: The study included 1200 patients, admitted in the TUHF from May 2006 to February 2010. We included all patients with (CHF) symptomatic class II, III, or IV. All patients were evaluated clinically with monitoring of blood pressure, 6 min walk test and electrocardiogram. Two-dimensional echocardiography and laboratory tests were performed in all patients.

Results: The mean age of our patients was 64.82 ± 12.14 years (16-100), 75% were men. Hypertension was the most frequently cardiovascular risk factor (26%) followed by smoking (22%) and diabetes (21%). Patients were mainly in NYHA class II (58%), and 27% were in NYHA class III. The average of 6 minute walk test was 121.36 ± 92.74 m (10 – 630). The mean heart rate at admission was 81.13 ± 17.24 bpm. More than half of our patients had an LVEF $< 35\%$ (56.91%), 31.33% had LVEF between 35-50%, and 6.33% had an LVEF $> 50\%$. Ischemic (55.67%) and hypertensive heart disease (2.67%) remain the two most frequent etiology.

Regarding treatment; 78.33% of our patients were treated with beta-blockers, 89.08% with Angiotensin-converting enzyme inhibitors (ACEI), 50.75% with spironolactone, and 12.75% with diuretics. Resynchronization has been performed in two patients.

The optimal medical treatment has allowed a significant improvement in NYHA functional class: NYHA class II (20% vs. 58%, $P = 0.037$), NYHA class III (5% vs 27%, $P = 0.002$), a significant improvement in test 6min walk (121.36 vs 465.66 m, $P = 0.0001$), and a significant reduction in heart rate from 80.13 bpm to 63.12bpm ($P < 0.05$) on an average of 6.82 ± 4.18 months.

Conclusion: The creating of TUHF in our department has allowed an improving of the quality of care and an optimization of the treatment.